LOCAL GROUNDWATER ASSISTANCE GRANT PROGRAM

APPLICATION

ATTACHMENT 6

BUDGET

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

UPPER DISTRICT GROUNDWATER REPLENISHMENT MODEL

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Attachment 6 **Budget**

The proposed budget (attached) summarizes the estimated hours for developing a site-specific groundwater replenishment model to support the design, permitting, and management of a groundwater recharge project in the Main San Gabriel Basin (Basin). The model will provide a tool that will be used to address regulatory concerns and constraints for the Indirect Reuse Replenishment Project (IRRP); and to assess project design and management alternatives. The total cost for the design and development of the groundwater replenishment model is estimated to be $149,000. Upper District is requesting funding through this grant application for the total estimated project amount of $149,000.

The cost proposal has been divided into eight tasks that correlate with the tasks outlined in the Work Plan (Attachment 4) and the Project Schedule (Attachment 7). The specific tasks and the corresponding percentage of the total project costs are summarized below.

Task	Task Description	Cost[1]	% of Budget
1	Data and Document Review	$ 10,100	7%
2	Definition of Geologic Structure and Aquifer Properties	$ 15,600	10%
3	Surface Water Analysis	$ 11,300	8%
4	Conceptual Model Development	$ 18,400	12%
5	Steady-State Calibration	$ 12,100	14%
6	Transient Model Calibration	$ 17 100	11%
7	IRRP Management Model Runs	$ 14,600	10%
8	Project Meetings and Presentations; Quarterly Progress Reports, Model Documentation, and Final Report	$ 42,000	28%
	Total	$149,000	100%

1. Cost numbers are rounded to the nearest $100, resulting in the sum of the tasks not equaling the total. See the attached table for more detailed numbers.

The first seven tasks are milestones of model development and have specific deliverables that are outlined in the accompanying Work Plan. Task 8 includes the necessary meetings, reporting, and coordination for a successful project. Quarterly progress reports will be provided to ensure that the project progresses through the appropriate milestones in a timely and cost savings manner. The quarterly reports will summarize the actual work performed, and status of each task's schedule and budget.

USGVMWD Cost Proposal
Groundwater Replenishment Model

Tasks		Billing rate ($/hour)	Staff Hours by Task $173	$155	$110	$105	$92	$89	$68	Total
Task 1	**Data and Document Review and Preparation**									
	Collect and review geologic, hydrologic, and GIS data and reports		2	24	6			4		$5,082
	Review and Describe other Regional and Previous Basin Models		1	16	10			2	2	$4,067
	Develop Anotated Bibliography		1		4				2	$749
	Expenses									$200
		Subtotal, Task 1:	4	40	20	0	0	6	4	$10,098
Task 2	**Geologic Structure and Aquifer Properties**									
	Geologic Analysis, Cross Sections, and Mapping			16	4	8		16		$5,184
	Development of Well Log Database			8	4	2	16	6		$3,896
	Development of Aquifer Properties Database and Analysis			8	8		16	4		$3,948
	Mapping of Aquifer Properties				4		16	4		$2,268
	Expenses									$300
		Subtotal, Task 2:	0	32	20	10	48	30	0	$15,596
Task 3	**Surface Water Analysis**									
	Reconstructed Streamflow at Model Boundary		1	16	4	2	4			$3,671
	Calculation of Areal Recharge		1	16	16					$4,413
	Determination of Stream Reaches and Conductances		1	2	4	2	2			$1,317
	Determination of Recharge Rates at GRRP and Spreading Basins		0	5	8					$1,655
	Expenses									$200
		Subtotal, Task 3:	3	39	32	4	6	0	0	$11,256
Task 4	**Development of Conceptual Model**									
	Develop Conceptual Model		6	16	6			2		$4,356
	Calculate Hydrologic Budget Components		4	24	24	16				$8,732
	Identify Key Wells and Water Level Target Locations		4	8		16		12		$4,680
	Review and Establish Model Code		1		2					$393
	Expenses									$200
		Subtotal, Task 4:	15	48	32	32	0	14	0	$18,361
Task 5	**Steady-State Simulation**									
	Development of Three-Dimensional Model Structure			72		24	4			$14,048
	Steady-State Model Run		8	24	8					$5,984
	Expenses									$100
		Subtotal, Task 5:	8	96	8	24	4	0	0	$20,132
Task 6	**Transient Calibration and Simulation**									
	Discretize Time for each Model Package		2	40	4				4	$7,258
	Calibrate Model		8	32	8	24				$9,744
	Expenses									$100
		Subtotal, Task 6:	10	72	12	24	0	0	4	$17,102
Task 7	**Groundwater Replenishment Management Model Runs**									
	Project Alternative Simulations		10	24	4				4	$6,162
	Retention Time Analysis		8	16	8					$4,744
	Monitoring Plan Development		8	8		8				$3,464
	Expenses									$200
		Subtotal, Task 7:	26	48	12	8	0	0	4	$14,570
Task 8	**Meetings, Presentations, Progress Reports,Final Report**									
	3 Project Meetings, including Kickoff Meeting		30					12	4	$6,530
	4 Presentations		40					16		$8,344
	Quarterly Progress Reports		4	20	8				4	$4,944
	Model Documentation		4	32				4	12	$6,824
	Draft Report		16	24	10			4	32	$10,120
	Final Report		4	8	8			4		$3,168
	Expenses									$2,000
		Subtotal, Task 8:	98	84	26	0	0	40	52	$41,930
		Project Labor Subtotal	164	459	162	102	58	90	64	$145,700
									Subtotal, Expenses	$3,300
									Grand Total	$149,000